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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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07/652,978 02/08/91 BUHR

C 4610-0027

EXAMINER
KUNZ, G

12M2/0807

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ART UNIT	PAPER NUMBER
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DATE MAILED: 1211

08/07/96

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 5/20/96 Amended 6/5/96

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 51-67 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 51-67 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of Reference Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

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PTOL-328 (Rev. 4-95)

- SEE OFFICE ACTION ON THE FOLLOWING PAGES -

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The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1211.

Since this application is eligible for the transitional procedure of 37 CFR 1.129(a), and the fee set forth in 37 CFR 1.17(r) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.129(a).

Applicant's first submission after final filed on May 20, 1996 has been entered.

Claims 51 - 67 are rejected under 35 U.S.C. § 112, first paragraph, as the disclosure is enabling only for claims limited to the base being guanine or N<sup>2</sup>-isobutyrylguanine and each R<sup>2</sup> being hydrogen. The declaration submitted by Dr. Bischofberger has been fully considered but is found persuasive in part. The data on page two of the declaration clearly shows that the only those 5'-methylene phosphonates with guanine as the base exhibited any antiviral activity. In addition, each of the compounds tested in Table 1 of the declaration have R<sup>2</sup> as hydrogen. As the applicant has convincingly documented, there is great unpredictability in this art of antiviral nucleoside analogs. The addition of a 5'-methylene phosphonate group to an effective antiviral agent can even eliminate all antiviral activity. This fact along with the data in the declaration

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showing that only two of the tested nucleoside analogs inhibited the replication of even a single herpes virus would lead the person of ordinary skill in the art to have sound reason to question whether 5'-methylene phosphonate nucleoside analogs with R<sup>2</sup> being phenyl or alkyl (1 - 12C) would retain its antiviral activity. The specification supports the fact that N<sup>2</sup>-isobutyrylguanine nucleoside analog is a precursor to the guanine nucleoside analog. However, applicant's argument that the 2,6-diaminopurine nucleoside analog would also be considered a precursor of the guanine nucleoside analog is not found persuasive because only 2,6-diaminopurine nucleoside is a substrate for deaminating enzymes that would yield guanine. The 2,6-diaminopurine ribonucleoside 5'-methylene phosphonate would not be expected to be deaminated by the same enzyme as taught by Spector et al. and suggested by the applicant on page 9, second paragraph since their structures are vastly different. See M.P.E.P. §§ 706.03(n) and 706.03(z).

The rejection of claims 53 and 54 under 35 USC 102(b) as being anticipated by Martin et al. has been withdrawn in view of applicant's persuasive arguments.

The rejection of claims 51 - 54 under 35 USC 112, second paragraph, has been withdrawn in view of applicant's amendments to the claims.

The rejection of claims 51 and 52 under 35 USC 103 as being

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unpatentable over Chu in view of Reist has been withdrawn in view of applicant's arguments.

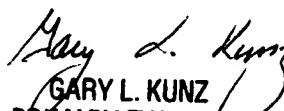
No claim is allowed. Claims limited to the base being guanine or N<sup>2</sup>-isobutyrylguanine and each R<sup>2</sup> being hydrogen would be allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kunz, whose telephone number is (703) 308-4623. The examiner can normally be reached on Tuesday through Friday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Kight, can be reached on (703) 308-0204. The fax phone number for this Group is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1235.

Gary L. Kunz, Ph.D.  
August 2, 1996

  
GARY L. KUNZ  
PRIMARY EXAMINER  
GROUP 1200